

IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) In a code division multiple access transmit modulator comprising a channel encoder for convolutionally encoding an input signal from a vocoder with symbol repetition and interleaving ~~the encoded signal~~; a channel modulator for combining ~~the~~an output signal from said channel encoder and a second orthogonal code signal distinguishing one from another traffic channel; a pair of pseudo noise (PN) combiners, each for combining the respective output signals of said channel modulator and a respective one of a pair of pseudo noise signals which have a predetermined offset in phase; a pair of lowpass filters, each for filtering a respective output signal of said ~~plurality~~pair of PN combiners and flattening the power level of ~~the~~its output signal; and an analog signal modulator for converting ~~the~~ output signals of said pair of lowpass filters to an RF signal, an apparatus for obtaining multiple subchannels within a traffic channel, comprising:

a plurality of subchannel encoders substituted for said channel encoder, each for convolutionally encoding with symbol repetition and interleaving input data from a respective one of a plurality of subchannels, ~~the~~a data rate of each of the plurality of subchannels being lower than the encodable data rate of the traffic channel by said channel encoder;

a plurality of subchannel modulators, each for combining an output signal from a

respective one of said plurality of subchannel encoders and ~~a first~~ respective first orthogonal code signals distinguishing one from another subchannel, all subchannels being accommodated in a single traffic channel and ~~the~~ a bit rate of the respective first orthogonal code signals being lower than that of the second orthogonal code signal; and

a subchannel summer for summing output signals of said plurality of ~~the~~ subchannel modulators and providing the summed signal to said channel modulator.

2. (Currently Amended) An apparatus according to claim 1, wherein the data rate of each of the plurality of subchannels is N times lower than a predetermined data rate of ~~input~~ the summed signal that is inputted to said channel encoder, N being the number of said subchannel encoders.

3. (Currently Amended) An apparatus according to claim 1, wherein the ~~data~~ bit rate of the respective first orthogonal code signals is equal to a predetermined data rate of input signal that is inputted to said channel modulator.

4. (Currently Amended) An apparatus according to claim 1, wherein said subchannel summer comprises:

a plurality of storing means, each for storing subchannel signals from a respective one of said plurality of subchannel modulators; and

data processing means for reading and processing the subchannel signals stored in

said plurality of storing means.

5. (Currently Amended) An apparatus according to claim 1 or claim 4, wherein said subchannel summer reduces the energy of ~~the~~ subchannel data of each or all of the plurality of subchannels.

6. (Currently Amended) A method of obtaining multiple channels within a traffic channel in a code division multiple access transmit modulator, comprising the steps of:

(a) encoding a plurality of input signals by using convolutional encoding, symbol repetition, and interleaving independently;

(b) multiplying each of ~~a~~the plurality of the encoded input signals by ~~a first~~ respective first orthogonal code signals distinguishing one from another subchannel, so as to provide a plurality of resultant subchannelized input signals;

(b) mixing the plurality of subchannelized input signals into a resultant combined signal;

(d) multiplying the combined signal by a second orthogonal code signal, ~~the~~a bit rate of which is higher than that of the respective first orthogonal code signals, distinguishing one from another traffic channel, so as to provide a resultant channelized signal;

(e) multiplying the resultant channelized signal by a PN code which is predetermined-offset in phase, so as to provide a PN code modulated signal;

(f) filtering the PN code modulated signal and flattening ~~the~~its power level in the

frequency band; and

(g) converting the filtered signal into a radio frequency signal.

7. (Currently Amended) A method according to claim 6, wherein ~~the~~a data rate of the input signal is N times lower than ~~the~~a data rate defined for the resultant combined signal, N being ~~the~~ a number of ~~for~~ said plurality of input ~~data~~signals.

8. (Currently Amended) A method according to claim 7, wherein ~~the~~a bit rate of the respective first orthogonal code signals is equal to ~~the~~a data rate defined for the resultant combined signal.